JULY 1901

See volume 8 for index.

PRICE 15 CENTS.

THE LIBRARY OF CONGRESS,
Two Copies Received
JUL 5 1901
COPYRIGHT ENTRY
CLASS XXc. No.

PHOTO-ERA

ILLUSTRATED MONTHLY

THE AMERICAN JOURNAL OF PHOTOGRAPHY

BOSTON · PHILADELPHIA · CHICAGO

BENJ. FRENCH & Co
CAMERA SUPPLIES

Model Lenses

made by the original firm of

Voigtlander & Son

of

Braunschweig, Germany

Are the

PORTRAIT-EURYSCOPES,

in two series (only for portraiture); the EURYSCOPES, in three series (for portraiture and general outside work) and the Collinears for groups and all outside work.

Write for particulars to the importer and agents—

BENJ. FRENCH & COMPANY

319 Washington St.

opp. the Old South

Boston, Mass.

TABLE OF CONTENTS

ILLUSTRATIONS.

Bringing Home the May	*H. P. Robinson.*	*Frontispiece*
Ludlow, England		1
When the Day's Work is Done	*H. P. Robinson*	3
Fading Away	" "	4
Hemlock Gorge	*Frederick Bonnet, Jr.,*	5
A Study for a Picture	*Oliver Greenway*	6
The Birches	*Arthur A. Gleason*	9
November Twilight	" " "	11
Morning	*Hiram Hall Rustin*	12
Youth's Companion Exhibit	*James E. Taggart*	15
An Interrupted Repast	*Clyde L'Amoureux*	16
Male Redwing Blackbird Feeding Young	*Francis H. Herrick*	17
Cedar-Bird at Nest	" " "	18
Female Kingbird	" " "	19
Kingbirds Rending an Unruly Dragonfly	" " "	20
Female Brown Thrush Brooding Young	" " "	21
Male Kingbird	" " "	22
Kingbird Family	" " "	23
The King-row		24
Side View of Large Ring of Smoke	*Prof. R. W. Wood*	25
Side View of Vortex Ring of Smoke	*Prof R. W. Wood*	25
A Bobtail Flush	*Frank S. Haines*	29
The Latest Magazine	*Dr. W. E. Dieffenderfer*	30
Irma	*W. C. Babcock*	31
A Young Patriot	*Dr. J. H. Eaton*	39

ARTICLES.

H. P. Robinson, A Biographical Note	*Thos. Harrison Cummings*	1
Gum Bichromate and Ozotype Printing	*Arthur A. Gleason*	7
Developing the First Picture	*Frank R. Fraprie*	13
A New Method of Bird Photography	*Francis H. Herrick*	17
Photographing Rings of Smoke		25
Instructions for the use of H & C. Gum Bichromate		26
The Tenth Annual Exhibit of the Capital Camera Club	*Chas. E. Fairman*	29
London Letter	*Percy Lund*	33

DEPARTMENTS.

Foreign Abstracts; Notes and News; The Crucible; Book Notes; Editorials.

Everything for the Camera.

Developing, Printing and Enlarging.

"GRAVURA" New Brand of

Paget Prize Lantern Plates for Lantern Slides

by simple development only, they give a great variety of colors ranging from Blue-Black, through Browns and Sepias, to brilliant Red Chalk. All operations may be carried out in ordinary gas-lighted room

The lightest tripod in the world, weight 15 ozs., length when extended, 4 feet; closed, 14 inches, made of aluminum.

Lumiere's Persulphate Ammonia for Reducing.

Telephone, 1117 John.

Send for catalogue. P. E.

WM. C. CULLEN,

Sole Agent for U. S.

61 William St., New York.

Branch: 640 Madison Ave.

Established 1882.

"BRINGING HOME THE MAY."

By H. P. Robinson.

Frontispiece, July, 1901.

PHOTO ERA

PHOTO ERA

THE AMERICAN JOURNAL OF PHOTOGRAPHY

VOL. VII. JULY 1901 No. 1

LUDLOW, ENGLAND. BIRTHPLACE of H. P. ROBINSON.

H. P. Robinson

A Biographical Note by

THOS. HARRISON CUMMINGS

ONE of the most active careers that the British photographic world has known, has just been brought to a close, by the recent death of Henry Peach Robinson at Tunbridge Wells, England. In England and on the continent, for nearly half a century (1857 to 1900) no single influence has been greater than his, in shaping the progress of pictorial work, while the impulse of his example and precept has been felt everywhere throughout the world wherever men sought to make pictures with the lens and camera.

He was born in the picturesque little village of Ludlow, in Shropshire England, July 9, 1830. "At Ludlow," to use his own words, "nature led me forward by her own charms. I was an art student before I heard of photography, and exhibited at the Royal Academy in 1852. During the same year, it so happened that I read something about photography in some magazine and this ultimately led to my setting up a little camera."

In 1857, he went into a studio professionally at Leamington, and thereafter came the long series of combination or composition pictures with

which his name was associated and which have since aroused so much interest in the photographic world. In 1858, came his first serious effort, entitled "Fading Away," a copy of which is shown herewith. The original print was made from five different negatives. Later on unfortunately, the negative was left in the damp by a careless assistant and was ruined.

This was long before the days of the improved photographic processes, when Mr. Robinson albumenized and sensitized his own papers for printing. Through the courtesy of the editor of The Practical Photographer, we have been able to furnish our readers with specimen pictures of the two distinct branches of work that engaged his attention. First, the combination or composite subject, in which the constituent elements were photographically pieced together, to form the narrative whole; such as "Fading Away," and "When the Day is Done." Secondly, landscape with figures, illustrative of an incident or story, such as "Bringing home the May," which forms the frontispiece of this issue.

Of the picture entitled "Fading Away," we have already spoken above. "When the Day is Done" was made in 1877. It was the last picture he ever made by the collodion process and was constructed from six separate negatives which are arranged so as to complete the picture in three printings.

"Bringing the May," first appeared in 1862 and was the most ambitious and possibly the finest of his many pictures of the composite order. The original measured 40 x 15 inches and was printed from nine different negatives. Child Bayley declares in a recent number of Photography, that his (Robinson's) composite photographs inspired much criticism as to legitimacy and on other grounds; but from the publication of his first picture of note, "Fading Away" (1858), through an almost endless series, whatever might be said of his methods, none could question his ability or the sincerity of his work. For full thirty years, says the British Journal of Photography, Robinson had an extraordinary vogue in the pictorial photography of the time and the influence he exercised on contemporary photographic work was undoubtedly very great.

In literature he accomplished much. In connection with Capt. Abney he published a treatise on Silver Printing, which is much sought after.

He was a prolific writer on the subject of photography in general, and his books and magazine articles have attained a wide circulation. "Pictorial Effect in Photography," "The Studio and What to Do in It," "Letters on landscape photography," "Picture Making by Photography," and the "Elements of a Pictorial Photograph" are all popular treatises from his pen that enjoyed a widespread success and continue to be read in the photographic world.

In the thirty years that have elapsed between 1860 and 1890, his success as an exhibitor was remarkable. He was the recipient of one hundred medals from various sources and his reputation became world wide in extent.

Mr. Robinson is survived by a widow and several children, one of the latter being Ralph W. Robinson, the well known photographer. Having long been associated with his father, he is well equipped to furnish prints of his father's work.

Unfortunately the negatives produced previous to 1877 have been only partially preserved and few are in a condition to print from direct. If there is a demand for them, however, the work of reproducing them will be undertaken at once.

Meanwhile, the later and best known prints such as "Wayside Gos-

WHEN THE DAY'S WORK IS DONE. By H. P. Robinson.

FADING AWAY. By H. P. Robinson.

sip," "A Merry Tale," "Dawn and Sunset," "When the Day's Work is Done," "Carolling," "Morning Mist," "The Lady of Shalott" and "Sleep" are all negatives suitable for sepia platinotype and are largely printed by this process.

We have just received a little catalogue of these and other prints, which will be sent gratis on application to Ralph W. Robinson, Lindfield Corner, Redhill, Surrey, England. It gives a complete list and prices of all the pictures. The price of the prints whether mounted or unmounted is the same.

The mounted prints are intended for close-up framing and have only small margins, unless otherwise ordered. We are advised that collections of prints will be sent for selection, in response to requests for same, provided they are accompanied by remittance or reference.

In the language of the British Journal, "Robinson's exact place in the history of that branch of photographic work with which he was identified has yet to be assigned by a competent authority and his influence on contemporary and succeeding work correctly estimated. This is a task perhaps best remitted to the future which may be trusted to yield both the opportunity and the man. Looking back over the gulf of years, the shadowy but notable personalities of D. O. Hill, O. G. Rejlander, Julia Margaret Cameron, now joined by H. P. Robinson, stand out in recognition. But what existing influences pictorial photography in 1901 owes to each of them, who shall say? The last link between the old order of things is snapped by the death of H. P. Robinson whose disappearance, we are sure, will be regretted by photographers all the world over and by none more sincerely than by the writer of his brief notice."

HEMLOCK GORGE. (Second Prize.) By FREDERIC BONNET, JR. 2 G., HARVARD.
HARVARD—PENNSYLVANIA INTERCOLLEGIATE CONTEST.

FADING AWAY. By H. P. Robinson.

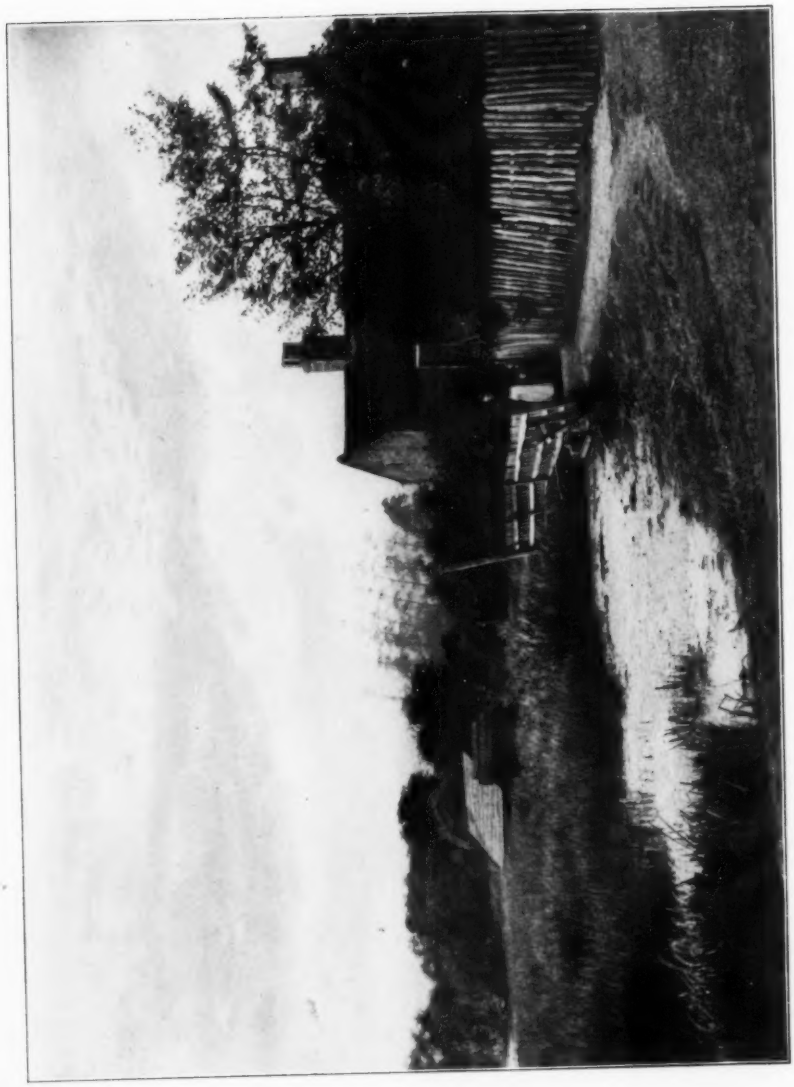
sip," "A Merry Tale," "Dawn and Sunset," "When the Day's Work is Done," "Carolling," "Morning Mist," "The Lady of Shalott" and "Sleep" are all negatives suitable for sepia platinotype and are largely printed by this process.

We have just received a little catalogue of these and other prints, which will be sent gratis on application to Ralph W. Robinson, Lindfield Corner, Redhill, Surrey, England. It gives a complete list and prices of all the pictures. The price of the prints whether mounted or unmounted is the same.

The mounted prints are intended for close-up framing and have only small margins, unless otherwise ordered. We are advised that collections of prints will be sent for selection, in response to requests for same, provided they are accompanied by remittance or reference.

In the language of the British Journal, "Robinson's exact place in the history of that branch of photographic work with which he was identified has yet to be assigned by a competent authority and his influence on contemporary and succeeding work correctly estimated. This is a task perhaps best remitted to the future which may be trusted to yield both the opportunity and the man. Looking back over the gulf of years, the shadowy but notable personalities of D. O. Hill, O. G. Rejlander, Julia Margaret Cameron, now joined by H. P. Robinson, stand out in recognition. But what existing influences pictorial photography in 1901 owes to each of them, who shall say? The last link between the old order of things is snapped by the death of H. P. Robinson whose disappearance, we are sure, will be regretted by photographers all the world over and by none more sincerely than by the writer of his brief notice."

HEMLOCK GORGE. (Second Prize.) By FREDERIC BONNET, Jr. 2 G., HARVARD.
HARVARD—PENNSYLVANIA INTERCOLLEGIATE CONTEST.



A STUDY FOR A PICTURE. By Oliver Greenway. First Award—Landscape. Prov. Camera Club.

Gum Bichromate and Ozotype Printing

ARTHUR A. GLEASON.

THE gum bichromate process is not in reality new, its beginning dates back to about 1859. It was for many years unused, however, until about 1894, when, through the experiments and writings of one or two French photographers, serious workers in England and America began to recognize its artistic possibilities. Since then it has made rapid progress among the workers of the so-called new school. While every gum print is not of necessity a picture, yet in the hands of an artist the process is certainly capable of many fine effects, and some of the masterpieces of the leading workers in this country have been produced by its aid.

In many respects, it has advantages possessed by no other medium, while on the other hand, it certainly is not the equal of platinum or carbon in some points. While unsurpassed in the rendering of broad effects, giving strong and sketch-like pictures, it does not give the wealth of delicate detail and half-tone which may be obtained by either the platinum or carbon process. But for freedom of expression, range of color and the ease with which the final result may be controlled, it has no equal.

The working of it is not particularly hard to learn, and the cost, aside from the first outlay, is next to nothing. Even the first cost is not great, all required being the paper for coating, the pigment or coloring matter, some gum arabic or ordinary mucilage, a little bichromate of potassium and a few brushes.

The paper is the first consideration. Most writers specify certain kinds as being particularly suited to the gum process. I have found that almost any paper can be used, provided it has a suitable surface, and that it is tough enough to stand repeated soakings in hot water. Drawing papers are good, the rough ones being used where the absence of detail is desirable, and the smoother grades for prints where detail is required. Some of the finer grades of note paper make very pleasing prints of small subjects. Unless the paper is sized, the pigment will be apt to sink into the fiber and cause a staining of the high lights.

However, most papers are sized by the manufacturer. But sometimes it is an advantage to use unsized paper, especially if you are printing from a hard or strong negative. If it is found necessary, though, the paper may be immersed in a two per cent. solution of starch, or brushed over with a three or four per cent. solution of arrowroot, made by mixing in hot water and bringing to the boiling point. After sizing, the paper should be thoroughly dried by hanging with clips upon a line, in a rather warm room.

For sensitizing, bichromate of potassium is generally used, although bichromate of ammonium is just as good. For use make up a ten per cent. stock solution by dissolving in hot water. This may be done in a large mouthed bottle, and the solution will keep for months. The gum used is generally gum arabic, which seems to give the most satisfaction. It can be bought of any chemist and it is essential that it be pure, otherwise it may not be perfectly soluble. For use prepare a twenty-five per cent solution by working up in a mortar with cold water. It may be used considerably stronger if desired, although my experience prompts me to recommend the thinner solution. If

it dissolves slowly it may be warmed slightly, but it is best to let it stand over a day, as heating much may greatly affect its solubility. If desired to keep, add a few drops of formalin or chloroform as a preservative. I have found that a good quality of mucilage answers very well, in fact I use it a great deal as it saves me the bother of mixing, which is quite an item if one's time is limited.

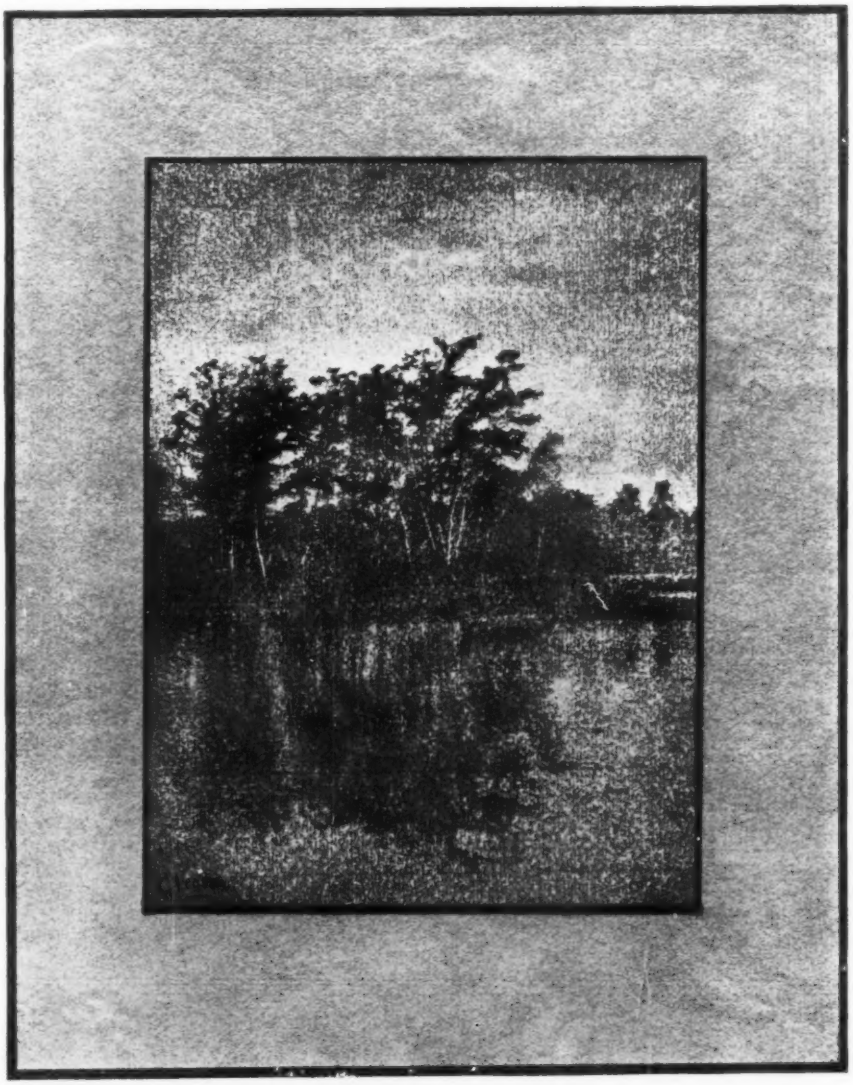
The pigment is the next consideration. Either dry or moist colors may be used with equal success. If dry are to be used, get the finely ground ones which may be obtained from any large dealer in artist's supplies. The moist colors put up in tubes, commonly used by water color painters, are very convenient. The selection of colors rests with the worker. Burnt umber, Indian and Venetian red are all good colors to begin with. Lampblack is also very good. Other colors will be used as the subject and the taste of the user may suggest.

For brushes used in coating, a good camel's hair spreader about two inches wide, and a badger blender will be needed. Add to the materials already mentioned some sheets of blotting paper, a smooth board large enough to coat the paper upon, a few thumb tacks, and one or two rather deep trays for developing the print in, and you will be ready for work.

There are two ways of preparing the paper for printing, one by mixing the pigment, gum, and bichromate solution in proper proportions, and spreading upon the paper; the other method, just sensitizing the paper by immersion in the bichromate solution and, after thoroughly drying, spreading the gum solution containing the pigment. The first being the easiest I will explain that method of working.

Pour one half an ounce of both the gum and bichromate solutions in a mortar. After mixing well, pour the pigment in, a little at a time, working it thoroughly into the solution with a pestle or brush. The exact amount of pigment to be used can only be determined by experience. There should be just enough so that, when the mixture is spread very thinly upon a sheet of paper, the color will be no deeper than are desired in the heaviest shadows of the finished picture. As the amount of pigment has a great deal to do with the final result, it is right here that much depends upon the artistic taste and practical experience of the worker. Taste, to determine what the final result should be and experience, to teach how that result may be reached. However, the beginner to get some idea of how much pigment to use, may try about fifteen grains of lampblack or twenty grains of burnt umber or Indian red. It will be seen that the color used, as well as the subject and negative to be printed from, all have, an influence upon the amount of pigment necessary.

After mixing the coating well, strain through a bit of old or well washed muslin, and proceed to coat the paper. Spread a piece of blotting paper on the board and having cut a sheet of the paper to be coated a little larger than the negative, tack or pin it by the corners upon the blotter. Take up some of the solution with the spreading brush and rapidly cover the paper, making first cross strokes and then brushing up and down. After making as even and smooth a surface as possible, pick up the blender quickly and lightly go over the surface, taking out all marks and unseen places. All this must be done in fifteen or twenty seconds, for all marks have to be removed before the gum begins to set, when further brushing only makes matters worse. The pins holding the corners may have to be removed and replaced, as the paper generally stretches when wet by the solution. Care must be taken not to get the



THE BIRCHES. By Arthur A. Gleason.

gum spread on too thickly, as a very thin coating is essential to give a good printing and developing quality. The coating should be so thin that the grain of the paper may be seen through it. The process of coating may be carried on by davlight, if not too near the source of light, but as soon as the gum is spread the paper must be put in a dark place to dry. It is well to have another board to tack the paper to until dry. The drying will take about half an hour if the place is fairly warm and free from moisture; care should be taken though, that the paper is not put in contact with a negative until thoroughly dry. The solution is not sensitive to light until spread, and the finished paper will not be affected by oil or gas light.

If it is desired to sensitize first and coat afterward, the following will give an idea how to proceed. Immerse the paper in a deep tray filled with the ten per cent. bichromate solution and allow to remain about three minutes. A number of sheets can be placed in the tray at one time being careful to arrange so that each one is taken out at the proper moment. Dry by hanging on a line in a dark room. After the paper is dry it may be packed between blotters or wrapped in waxed paper and placed in a box. It must be well protected from the light and if kept in a dry place it will keep good for some time, After sensitizing the paper is coated precisely as in the first method, except that water is substituted for the bichromate solution when making up the coating fluid. The paper as prepared by either method may be kept for some time, if packed in a box and kept in a dry place.

Having prepared the paper by either method you are ready for the printing, one of the most important as well as the most uncertain parts of the whole process.

Most writers recommend timing by an actinometer, but as so many conditions have to be considered I believe it is just as well and easier to work without one. The thickness of the film, character of the negative and color of the pigment all have a direct influence upon the time of printing. Papers coated with lampblack or burnt umber take longer to print than those coated with light brown or red. All other things being equal, paper sensitized and coated in one operation requires about double the exposure of that prepared by the other method. Taking a negative that would make a rather strong print on platinum and using paper prepared by the first method a trial might be made, exposing in diffused light about twenty minutes. Too short an exposure will leave the films very soft for development, while on the other hand printing too long will harden the film so that a great deal of rubbing with absorbent cotton and soaking in hot water will be necessary. If, however, you wish to do local development of the print, it is well to expose rather longer than otherwise, or the gum will be too soft to stand the treatment. I generally print in diffused light, as by so doing one is better able to get the same strength of light and thereby is better able to judge the time necessary. It is a good plan to cut one sheet up into small pieces and make trial prints from some part of the negative giving a good range of tones. By varying the exposure and marking upon the back of each piece, the proper time can easily be determined before making a large print. This is rather a slow way of doing, one will find, but if after working and fussing all day, one or two really fine prints have been produced, the satisfaction is greater than if a dozen ordinary things had been made, and each individual print will be a thing of pleasure. I might say here a word about the character

of the negative best suitable for gum printing. It should not be too thin nor should it be too hard. It should depend for its beauty upon the masses of light and shade rather than upon small detail or delicate half-tone.

Having exposed the paper you can at once proceed to develop, or the prints may be put aside in a box or drawer until a convenient time. Fill a deep tray with cold water and immerse the print face down. After four or five minutes turn the print face up and slip a piece of glass under it, fastening one corner of the print by means of a clip. Carefully and gently pour water upon it and if the coating and printing have been just right in a few minutes the high lights will begin to appear. This treatment may be continued until the print is fully developed. If, however, the development does not begin by pouring water on the print, take a piece of absorbent cotton and gently go over the surface of the print. It is well, during this operation, to keep the print under the surface of the water in the tray. If the print has been greatly over, printed, harder rubbing and soaking in warm or even hot water may be necessary. Gradually bringing the print out, by working with cotton or brushes, is very fascinating work, and gives one the opportunity of indulging in local development or joking,as it is sometimes called. I rather prefer overprinting enough to develop in this manner. After the development has been completed, the print had best be dried by laying surface up on a bit of blotting paper.

The prints require to be cleared of traces of bichromate by placing for a few minutes in a five or ten per cent. solution of alum. The drying first is advisable, for unless the print was

NOVEMBER TWILIGHT. By Arthur A. Gleason.

exposed long enough to make the gum quite hard, standing in the alum bath may cause the image to run together. I well remember how one of my first successful prints was made a dismal failure in that manner. After removing from the alum, rinse for a few moments and then dry the prints.

In this short article, I have simply tried to give a general idea of how to set about to do gum printing. Experience is the only teacher, however, and one will learn more by an intelligent trial or two, than by reading many books upon the subject. A continuation of this article in the next number of the PHOTO ERA will deal with the new ozotype process and how it may be combined with the gum process to advantage.

MORNING. (First Prize.) HIRAM HALL RUSTIN, 1 G., HARVARD.
HARVARD-PENNSYLVANIA INTERCOLLEGIATE CONTEST, 1901.

Developing The First Picture

F. R. FRAPRIE.

HAVING taken the first picture or batch of pictures and arrived home with them, we are naturally anxious to see what the result of our efforts is. For this purpose, we must develop the plates or films, and so must have a dark room. Not all of us have the room to spare for a specially constructed dark room, and must perforce employ some makeshift. If we can restrain our impatience until nightfall, we will find that almost any room in the house is or can be made dark enough to allow of developing. Of course we will, if possible, choose a room which has running water, such as the kitchen or the laundry. It is not absolutely necessary to have running water in the dark room, for the plates are insensitive to light when they arrive at the stage of washing, but much water is used in photography, and it is convenient to have it always at hand.

The dark room must be lighted with light of a color which will not affect the plates, and the color most generally employed is red. The cheap red lanterns which are usually sold are all wretched in operation, and after much experience I have given them up forever. When I have to develop where a first-class lantern is not available, I buy a candle, and a sheet or two of post-office paper, which is orange, and can be obtained at any camera store. I roll this into a cylinder about five inches in diameter, and eighteen inches high, using preferably two thicknesses of paper. I then light the candle, and, setting it on the table where I am going to develop, I put the roll of paper around it. By this light I have developed many hundred plates, and have never found it to be unsafe for ordinary plates or films. For very rapid plates, I cover the tray until development has started, and keep it covered as much of the time as possible, but this should always be done with any light. Some light shines out of the top of the cylinder, but if the ceiling is moderately high, and not too white, no harm results from this. If a first-class lantern can be bought, do so; if you have a dark room place the light outside, and use one sheet of ruby glass, and one of orange paper.

Having settled the question of light, we proceed to develop. The development of plates and films is exactly alike, except for the fact that, on account of the flexibility of films, some method of handling must be used which will permit of easy and safe manipulation. Professional operators usually develop a strip of film entire in a long tank, but the quantity of developer needed is so great, and the cost of the tank so much that few amateurs are able to work thus. The usual practice is to cut the film into single or double exposures, and develop singly. Unfortunately, the film as soon as it is wet has a habit of curling so that it is difficult to keep the whole of it submerged. A good way to avoid this is to use the aluminum film holders which can be easily obtained. When the films are inserted in these, they may be handled as easily as plates.

As to the developer to be used, there are many good ones. The best plan is to use, at first, the developer which is recommended by the maker of the plates, the formula of which is enclosed in the box. The maker has been at great pains to find out the formula best adapted to his plates, and his advice is good. No developer is suitable for all plates, and if you

buy somebody's prepared developer, you may get good results, and you may not. If you have not facilities for mixing formulas, go to a druggist. He will do it for you. But as soon as you can, get a cheap balance, and mix your own solutions. You will soon save enough to pay for the scales. If you insist on buying prepared developer, get metol-hydrochinon, or hydrochinon. They are the best for the beginner.

When ready to begin developing, see that the light is all right, then lay your first plate or film in its holder, after dusting it, in the empty developing tray. Place the developer in a measuring glass, using not less than three or four ounces for a 4 x 5 tray, and pour the whole over the plate with one motion. This is not easily described, but with a bit of practice, there will soon be no difficulty in entirely covering the plate with one sweep of the developer. If the plate is not all covered at once, there may be a difference in the time of appearance of the different parts of the image, and this will cause markings on the plate which cannot be gotten rid of, for no amount of development will cause the part which starts later to catch up.

It is a good plan to rub the whole surface of the plate with a tuft of cotton immediately after flowing, to remove air bubbles, which would otherwise cause transparent spots in the negative. At first, the appearance of the plate is uniformly creamy white. In a little while, you will see dark spots appear where the strongest lights were in the subject. Soon the outlines of the picture appear, and then the finer details and the half tones. Finally the detail in the shadows becomes visible, but by this time probably, the picture is getting dim, being covered up, as it were. Now take the plate from the dish, and examine the back. If the high lights are visible, the plate is developed far enough, and after rinsing in clean water, is ready for fixing. But before describing this, I want to say a few words about Mr. Alfred Watkins' method of time development. He has found that under any conditions of exposure, dilution of developer, etc., there is for every developer a factor which multiplied by the time it takes the image to appear, will give the correct time for development. For instance, the factor for hydrochinon is 5 ; if you cover a plate with hydrochinon developer made by any formula or of any strength, and count the number of seconds which elapse before you see the first trace of a darkening on any part of the plate, and then multiply this number of seconds by five, you will get the number of seconds you must leave the plate in the solution to get the best possible gradation in the negative. If the image appears in 50 seconds, for example, you must develop 250 seconds. The factor for metol-hydroquinone is 14, for metol, 28, for ortol, 10, for eikonogen, 9, for pyrocatechin, 9.

After development comes fixing. For this purpose, we immerse the plate in a solution of hyposulphite of soda, or "hypo," until all the unchanged silver bromide, which is the yellow part of the film, is dissolved. This will be done in ten or fifteen minutes. It is necessary to leave the plate in the hypo for some minutes after all the yellow has disappeared. The plate is now no longer sensitive to light, and has become a negative. It may be removed to a lighted room, and washed there. The washing must last at least an hour in running water, or consist of fifteen complete changes of water, each of five minutes duration. The plate is then carefully rubbed with a bit of wet cotton, to remove any sediment, and stood up in a place free from dust to dry. During the drying the position must not be changed, or drying

JAMES E. TAGGART. (First Prize.) YOUTH'S COMPANION EXHIBIT.

streaks may appear, caused by one part drying faster than another.

Never use an acid fixing bath, or one which contains alum. There is no doubt that there is grave danger of impairing the permanence of the negative by using this sort of a bath. The chemistry is complex, and I cannot go into it in this place, but all good photographic chemists are now agreed that the acid bath is dangerous. In hot weather, you may have to use some substance to harden the plate to prevent its frilling, or peeling from the glass, especially if the wash water is warm. The best way to do this is to lay the negative, after fixing, and hastily rinsing, in a five per cent. solution of formalin for a minute or two. The plate must then be washed twice as long as usual.

The washed and dried plate is ready for printing and the next article in this series will be on methods of printing. Until you are ready to print and afterwards, in the intervals when the negative is not in use, it should be kept in an envelope, to prevent its getting injured. It should be named, numbered and indexed, so that it may be readily found.

AN INTERRUPTED REPAST. By R. Clyde L'Amoureux. First Award—Still Life, Prov. Camera Club.

MALE REDWING BLACKBIRD FEEDING YOUNG.

A New Method of Bird Photography*

FRANCIS H. HERRICK.

THAT a bird in the hand is worth two in the bush may be a good motto for an anatomist or epicure, but for the photographer of living animals a bird within reach of the hand and still in the bush is of far greater worth. The problem in Bird Photography is how to see and not be seen. If a bird is actually caught and kept in a cage or put under restraint in any way, its behavior is no longer perfectly natural and free, at least not until all fear has been subdued and it is no longer wild but tame. What is needed in successful bird pictures, is an invisible chain which shall hold the animals to some fixed spot which can then be approached in disguise.

Fortunately for the student of bird habit and instinct all these conditions are fulfilled for a most important and interesting period, — that of life at the nest. The nest is the given fixed point, and parental instinct is the invisible chain. The wild bird, however, is bound not merely to the nest, but to its young. Wherever the young go, the old birds follow. By using the nearly fledged young as a lure, some species could, I believe, be led across country for a mile or more. I have taken them two hundred feet without special effort.

* The Home Life of Wild Birds: A New Method of Bird Study and Bird Photography, by Francis H. Herrick, with 141 original illustrations from nature by the author. In press of Messrs. G. P. Putnam's Sons, New York and London.

Hitherto the bird-photographer has had to rely mainly upon chance in getting a picture of the nesting scenes. Most land birds depend upon concealment for protection from their enemies during the season of their young. Their nests are apt to be shrouded in grass or foliage, and, if easily approached, are usually inaccessible to the camera. If the nest is in a high bush or tree, the difficulties of the position and light are usually an effectual bar to obtaining good pictures, to say nothing of seeing what takes place. When the nest is near the ground or upon it and in a well-lighted spot, conditions which are only rarely fulfilled, it has been customary to set up the camera, and attaching a long rubber tube or thread to the shutter, to retire to a distance and wait for the birds to appear. When one of them is seen to go to the nest, the plate is exposed by pulling the thread or pressing the pneumatic bulb, and, if in luck, a picture may thus be obtained. Many plates, however, are sure to be spoiled; little can be seen, and the observer has no control over the course

Cedar-bird at nest prepared to feed young by regurgitation: a characteristic attitude. The parallel outlines of the neck show that the gullet is full.

Female Kingbird balancing herself with raised wings while feeding young.

of events. In the lines which follow, a method is described by which nesting birds can, in many cases, be successfully approached and studied with ease whatever the position of the nest.

It is a comparatively easy matter to examine and photograph the nest, the eggs, or the young of such species whose dwellings are accessible to all; but, to portray the free behavior of the adult bird of the shy land species is indeed quite another question.

My method is limited in its application, from the necessities of the case. It is based on the solid ground of animal instinct, and may confidently be expected to have a wide application; but how wide or general its use may become, can only be determined by well-directed experiment.

The method in use depends mainly upon two conditions:

(1) The control of the nesting site, and

(2) The concealment of the observer.

By nesting site is meant the nest and its immediate surroundings, such as a twig, branch, hollow trunk, stem, or whatever part of a tree the nest may occupy, a bush, stub, strip of sod, or tussock of sedge, that is — the nest with its immediate settings. If the nest, like that of an Oriole, is fastened to the leafy branch of a tree, the nesting bough is cut off, and the whole is then carefully lowered to the ground and set up in a good light, so that the branch with the nest shall occupy the same relative positions which they did before. The nest, however, is now but four

instead of forty or more feet from the ground. The nesting bough is carried to a convenient distance from the tree, and firmly fastened to two stakes, driven into the ground and placed in a good light. If the nest is in a tussock in a shaded swamp, the whole is cut out and taken to the nearest well-lighted place; if in the woods, it is carried to a clearing where the light is favorable for study. Again, when a nest like that of the Brown Thrush occupies the centre of a dense thorn bush which no human eye can penetrate and much less that of the camera, its main supports are cut off, and the essential parts are removed to the outside of the clump or to any favorable point close at hand. If the nest is but five or ten feet up, the main stem is severed, and the nesting branch lowered to the four-foot mark, a convenient working height.

This sudden displacement of the nesting bough is of no special importance to either old or young, provided certain precautions are taken. These are chiefly the protection of the young from excessive heat, and avoidance of unnecessary handling of the young after the flight-feathers have appeared, and they have acquired the instinct of fear. It is as if an apartment or living room were removed from the fourth story of some human abode to the ground floor or in case of the ground-building birds, as if the first story were raised to a level with the second. The immediate surroundings of the nest remain the same in any case. The nest might indeed be taken from its bough or from the sward, but this

Kingbirds rending an unruly dragon-fly. The female, who stands in front, was brooding when the prey was brought by the male.

Female Brown Thrush brooding her young. Lens, Extra Rapid 9 7-16 inch ; speed f-6 ; stop, 32 ; time, 1-5 second ; plate, Seeds' No. 27 " gilt edge " ; distance, four feet ; in full sun. July 13, 1900.

would be inadvisable, chiefly because it would destroy the natural site or the exact conditions selected and in some measure determined by the birds themselves.

For an observatory, I have adopted a green tent which effectually conceals the student together with his camera and entire outfit. The tent is pitched beside the nest, and when in operation, is open only at one point, marked by a small square window, in line with the photographic lens and nest.

When the birds approach the nest in its new position,and strange objects like the stakes which support the bough, or the tent which is pitched beside it arouse their sense of fear or suspicion, they may keep away for a time, or advance with caution. If very shy, like most Catbirds, they will sometimes skirmish about the tent two hours or more before touching the nest. The ice is usually broken, however, in from twenty minutes to an hour, and I have known a Chipping Sparrow and Red-eyed Vireo to feed their young in three minutes after the tent was in place.

The tent which I have used for two seasons is made of stout grass-green denim, and, with the frame, weighs only six and one half pounds. It can be pitched in ten minutes almost anywhere, and may be compactly rolled, and carried for miles without serious inconvenience. It is 6 1-2 ft. tall, 4 1-2 ft. long, and 3 1-2 ft wide, dimensions which will be found suitable for a person not much above the average height. One may spend any

Male Kingbird seeing a cicada safely down a hungry throat.

number of hours in it by day or night, and with a fair degree of comfort, excepting in very hot or sultry weather, when exposed to the sun on all sides.

The tent frame is in three pieces, two upright poles or stakes with folding cross bars, and an adjustable ridge-pole. The stakes should be from six to six and a half feet long, and may be easily lengthened at any time, as when the tent is to be pitched in a swamp or over mud and water. They are pointed at the lower ends which are set in the ground, and capped above with an arch of sheet zinc or iron to receive the ridge-pole. The latter is held in place with two pins or wire nails which are pressed through a hole in the zinc cap, and through the end of the ridge-pole into the upright stake. The eaves of the tent consist of a double fold of cloth projecting half an inch, to each corner of which is sewn a covered wire ring. When in position, the tent is firmly guyed by small cords fastened to each ring. The flaps are placed at one of the corners, and may be pinned together when in use. The free lower border of the tent is fixed to the ground by wire pins, which may be pushed through the cloth at convenient places. From four to eight of these pins are needed, and each should be seven or eight inches long, and have a large soldered loop at one end.

The front of the tent should be parallel with the nesting bough, when there is one, and the long axis of the latter should be parallel with the sun's course. The tent is so placed that the nest is in direct line, not with the middle of the tent, but with the window to one side. If the focal length of the lens be 6 1-2 inches,

Kingbird Family. The male — to the right — has captured a dragon-fly, whose stick of a body is seen projecting from the mouth of a young bird.

the nest mounted at the height of four feet, and the lens be twenty-eight inches from the rim of the nest we shall get a picture with adequate setting on a 4 x 5 plate.

Any good long focus camera with reversible back will answer, the size and weight being the considerations of greatest moment. Most naturalists and sportsmen, who travel long distances and carry their own traps, find a camera which takes a 4 x 5 plate the most convenient and economical. I have used this, but for work with the tent prefer a 5 x 7 size, because it gives a larger and better picture of the object sought. For work outside the tent, a "twin-lens," or a reflecting camera may be used. The principal requirement in either form is a long bellows.

In photographing animals close at hand the anastigmatic qualities of a lens count for little. It is depth of focus combined with high speed which are most needed, consequently any lens possessing these qualities will answer. In photographing birds sitting, brooding, or standing at the nest there is no difficulty with a lens of speed f-8, which requires one-twenty-fifth second to fully expose the plate, at a distance of 28 inches with full lens and strong light. With scenes in which the actors are in constant motion, however, we require a much faster lens, which will reduce the exposure to at least one-fiftieth of a second.

For animal photography the most rapid plates are none too fast, and any of the best brands can be recommended. Orthochromatic plates require careful treatment, but in skilled hands offer advantages which should not be neglected.

The minor articles which are needed to complete the bird photographer's outfit will be suggested by a little experience in the field. A saw, hatchet and nails are often required, as well as scissors, pins and a small hand mirror for use in setting the shutter from the rear. A toilet hand mirror which can be turned at any angle is a convenient means of inspecting the interior of nests inaccessible to the hand, but within reach of the mirror attached to a pole.

KING ROW. Showing position assumed by young Kingfishers.

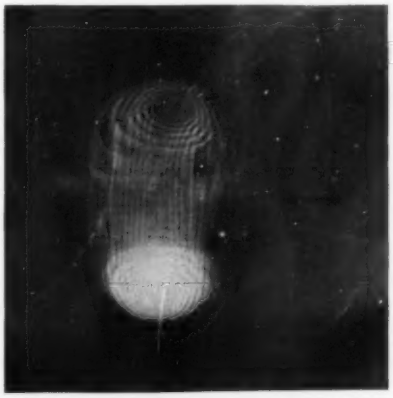
Photographing Rings of Smoke

Side view of large ring. Diameter 18 in. Direction of motion indicated by arrow.

PROF. R. W. Wood of the University of Wisconsin has recently favored the PHOTO ERA with photographic prints of smoke rings which are interesting and remarkable. As is well known, the average tobacco smoker can produce at will in the air, vortex rings of smoke, by exhaling ti through his lips by a sudden impulse of breath. But Prof. Wood has prepared an apparatus that works automatically in making these rings, which is called a vortex box. It is a cubical box having a 10 inch circular hole on one side while the opposite side is made of black enamel cloth, tacked on loosely across which and inside, are stretched diagonally two rubber tubes. When the air ring is expelled by striking the enamel cloth the rubber tubes give the recoil necessary to prepare for another projection. Fig. 1 is a side view of a large ring blown from a vortex box. It was taken in the full sunshine, with a Thornton Pickard focal plane shutter, exposure one one-thousandth of a second. Fig. 2 is side view of a vortex ring of tobacco smoke, blown from a paper tube one inch in diameter, and showing special stream lines. It was taken without a lens or camera, by blowing the ring in front of a photographic plate and illuminating the plate with a flash of light.

To make the air rings visible in the vortex box, a cloud of ammonium chloride is sometimes maintained in the box by means of two tubes, one delivering ammonia gas, and the other hydrochloric acid gas. Small rings were photographed by Professor Wood by casting the shadow on a sensitive plate, the source of light being an arc lamp focussed on the opening of a shutter placed at a little distance in front of the plate.

The structure of the rings is well shown by the photographs given herewith—a layer of smoke and a layer of transparent air being wound together in a spiral shaped figure.



Side view of vortex ring of tobacco smoke. Direction of motion indicated by arrow.

Instructions for the use of H. & C.'s Gum Bichromate Paper

Care of the Paper. The paper must be stored in a dry spot, and under these conditions will keep for an indefinite period.

Quality of the Negative. The negative must have good intensity and good transparent shades. They must however be neither hard nor fogged.

Sensitizing the Paper. Prepare a solution of,

5000 parts of water (distilled or rain water preferred)
250 parts Bichromate potassium, pure
50 parts Glycerine, pure

The simplest way to prepare the solution is to take a large wide mouth bottle, tie over the mouth a piece of cotton goods in the form of a bag, place the bichromate of potassium within the bag and pour the water upon it. The bag should be so adjusted as to be constantly in the water. The process of dissolving the crystal will then take place rapidly. Keep this bath in a cool dark spot, preferably in a cellar and filter before using. It will keep for a long time ; nevertheless it will be found most practicable to renew it after repeated use by the addition of a portion of fresh bath of equal strength.

To float the paper on the sensitizing bath, the sheet is held at two corners diagonally opposite, with the surface up ; and then is drawn through the bichromate bath to and fro quickly without stopping, so that the bath passes uniformly over the surface. It will be sufficient in general to pass the paper over the bath from 8 to 14 times in this manner. For large sheets, it will be found very practicable to have two operators perform the work, each taking hold of the paper at two edges.

After having passed it through the bichromate bath the last time, the sheet is to be passed over the edge of the tray in order to remove the excess of the solution from the back of the paper.

It is a matter of no consequence if a few parts of the coloring matter should run off the paper with the excess solution, for the surface is very rich in color and this frequently occurs when the bath is not very cool. The paper is sensitized in daylight as it gains sensitiveness when drying.

We advise the use of rubber finger tips.

Drying. The paper should dry in a dark, dry and properly ventilated space and this should proceed quickly. It would be impossible to dry it properly in a moist dark room.

Attach a small piece of filtering paper to the edge from which the solution runs off.

Do not dry the paper on a stove where there is too much heat.

Exposure. The paper when dried should be kept from the light. For the exposure, a photometer is required, as the paper is extremely sensitive.

It is impossible to state what should be the exact time of the exposure as this depends entirely upon the light, the negative and other attending conditions.

Development. Place the paper after it has been exposed in cool water and change the latter, repeatedly drawing the paper through the water, quickly at first, in order to free, by this rapid motion, the greatest portion of the bichromate. It is frequently advisable to rinse it off under the tap for the purpose of removing the air bubbles which are formed upon immersing it in water. After several minutes of washing, through which however the bichromate

need not necessarily have been removed absolutely, development may be commenced.

The following articles are required: A deep zinc tray arranged to be warm, a sheet of glass a little larger than the size of the picture, an agate ware pot and a thermometer.

Fill the zinc tray to half its depth with water and to the latter add saw-dust (some of which will accompany each shipment). This mixture should not be mushy but should be very thin and still. The tin plate should preferably be turned up on the long side. It is used to receive the paper after it has been washed and when ready for developing. Then, it is stood at an angle, in a raised position, in such a manner that the warm mixture of water and saw-dust which is continually dipped out of the heated tray by the tin dipper and which is constantly poured, in a thin stream, on the upper edge of the paper, will run off at the bottom and return to the tray.

This mixture can be used repeatedly and should be kept at a temperature of 112 degrees. In case of over-exposure, 112 degrees may even be exceeded. If the proper exposure has been made, development progresses rapidly. Even after several covers of the sawdust solution, the high lights appear. In the beginning they are still cloudy; then they become clear at the same time the half-tones and finally, the shadows appear.

If the high lights appear very quickly and clear, the picture is destroyed in the half-tones which is a case of under-exposure.

Clearing. After exposing the picture, wash it a few minutes under the tap in order to remove the last trace of the bichromate. It is then placed in the following solution.

500 parts water
200 parts bisulphite soda

It remains in this solution until the whites of the paper are entirely clear. Thereupon remove the bisulphite by repeated changes of water and hang the picture on a line to dry.

In place of the bisulphite solution an alum solution could be used. As a matter of fact both could be dispensed with and the last vestige of the bichromate could be removed by simply continual washing of the prints in clear water. We prefer however the bisulphite solution as it is a quicker and more reliable way of performing this work.

Retouching. As the pictures consist merely of colored matter bound by gum, any kind of retouching can be employed.

Such additions can be made during the process of developing, as the operator has the power of controlling the lights and shadows in the various portions of the picture by more or less use of the sawdust solution. Even when the picture is not yet dry corrections can be made with the brush.

The manipulation of the paper is much simpler than would appear from this description. Almost any results can be obtained through proper manipulation of the paper. For example, should it work too soft for certain negatives the following instructions may be followed to increase the contrast.

Instead of a 5 per cent. chromatic bath, solution may be reduced to 4 1-2 or even 4 per cent. or may be kept at 5 per cent. and the number of times passing through the bath may be reduced accordingly. Also an increase of the temperature of 112 degrees will result in greater contrast.

If more softness however is desirable proceed in the opposite manner. Increase the strength of the bichromate bath to 5-12 per cent. Naturally taking care however not to exceed the limit and use both a stronger bath and longer sensitizing.

The Crucible

PERSULPHATE REDUCER. Sometimes it is found that the action of persulphate of ammonium as a reducer is attended by failures. A little knowledge of the chemistry of the process may help us over our troubles. The salt, like other persulphates, decomposes readily in acid solution. Oxygen is given off, and the substance is converted into a sulphate. If the solution is alkaline, the oxygen is retained, and as the reduction is caused by the change of the image into silver oxide, such a solution does not reduce. In practice the following rules are useful. Do not dissolve the persulphate until ready for use. Of course, the solution will keep for a considerable period under proper conditions, and if the reduction is a common operation, this may be done. But for the amateur, dissolving as required will be much cheaper, as there will be no spoiled solutions to throw away at the end of a few months. Secondly, always test the solution with litmus paper, and if acid, add a little dilute sulphuric acid until the paper turns red. Thirdly, after reduction, do not rinse the plate under the tap but lay immediately in a solution of sulphite of soda, five per cent.

PREPARATION OF DEVELOPERS. A solution of eikonogen and hydrochinon with sulphite which had to be made in a hurry, was mixed by placing all the ingredients together in a bottle of cold water and setting it aside to dissolve spontaneously. When the time came to use it, about eighteen hours later, it was found that the solution was of a dirty yellow color, and that it was entirely useless for developing purposes. Some experiments were accordingly tried to determine the cause. Solutions were prepared with cold water, as before, with water which had been boiled and cooled, and with boiling water. The solutions were stored for ten days, half of each being placed in a brown bottle, and the rest in colorless bottles. These bottles, well corked, were exposed to light during this period. Both samples prepared with cold water were useless; both prepared with cold boiled water would develop the high lights, but failed to bring out the half-tones; both prepared with boiling water were in good condition. The color of the bottle apparently had no influence. The destruction of the developer must be ascribed to the oxygen of the air dissolved in the water. As is well known, boiling removes all gases dissolved in water, but as they are taken up again very quickly on cooling, the water must be used while still hot. Really boiling water should not be used, as it has a tendency to decompose the sulphite. After the developing chemicals are once dissolved in the water, there is much less tendency to absorb gases. Besides the developer named above, similar experiments were tried on ortol, and this also keeps much better when freshly boiled water is used as the solvent.

COPYING FROM BOOKS. A question having been asked about copying printed matter for lantern slides, we take this opportunity of giving a few hints on the subject. In copying from books, the chief difficulty is in getting the pages flat in the proper position. The easiest way to accomplish this is to support a sheet of glass, preferably plate, in an upright position on the table where the copying is done, and then to press the book or other subject against it. The glass may be supported at the edges by a printing frame, or by an old picture frame, which is to be fastened an inch or two in front of the usual vertical support for the picture. Pieces of cardboard may be used to wedge the book forward to the glass. If the illustration is large, a black screen before the camera is good to prevent reflections. If a single page is to be copied, and the printing on the back shows, the back may be blacked, or the paper may be pasted on a ferrotype plate and afterwards soaked off, or if neither of these can be employed, a sheet of black paper may be laid behind, although this is not wholly successful. If creases or folds are present in the paper, it is impossible so to place it that they will not show in the negative. To get rid of them the paper must be thoroughly dampened and then pasted around the edges about a quarter of an inch, and mounted on a flat board. When dry every crease will have vanished. Cut loose just inside the pasted edge. If the size may not be decreased, dampen, mount on a piece of paper an inch wider all round, pasting solid, and then mount the latter by the edges. If the printing on the back shows, the backing paper should be black. Now copy behind glass, as described above.

A BOBTAIL FLUSH. (Copyrighted.) By FRANK S. HAINES. Capital Camera Club.

The Tenth Annual Exhibition of the Capital Camera Club

CHAS. E. FAIRMAN.

FOR the first time in the history of the Corcoran Gallery of Art, its doors have been opened to an exhibition of photographic work. Heretofore, the work of the painter has been considered as the only work fitted to represent the scope of the Corcoran Art Gallery and its relation to the art societies of the District of Columbia. This exhibition therefore represents, to some extent, a challenge of comparison with the work of the Washington Society of Artists and the Washington Water Color Club whose exhibitions have been given in the Hemicycle Hall during the present season; and the admission of a photographic exhibition is a direct recognition of the art side of photography and its place among the works of the painters. The exhibition was opened April 22 and was continued until May 1, and judging from the numbers who attended, the Washington public have been as fully appreciative of the work of the camera as they have heretofore been of the work of the brush. The exhibition consisted of 269 well selected pictures, fully enough to comfortably fill the large Hemicycle Hall, and while some may hold the opinion that a few of the pictures hung could have been left out without detracting from the general success of the exhibition, still, considering the exhibition as a whole, it had the appearance of being complete and was not wanting in any of the features which render an exhibition interesting and successful. The pictures exhibited were carefully selected by a jury composed of the following members; Mr. James Henry Moser, Chairman, Mr. H. Hobart Nichols, Mr. Richard N. Brooke, Miss Mathilde

Mueden and Mr. Thomas W. Smillie. Mr. Smillie is a well-known photographer of the National Museum and is recognized as authority upon photographic matters both from the photographic and art side of the question; the other four members of the jury are well known painters whose standing in exhibitions has demonstrated their ability in their line of art work and their pre-eminent qualifications as a jury of selection. The pictures were divided into three classes. Twenty-five of the best pictures submitted were hung in the center of the north wall of the Hemicycle Hall, and on account of their possessing conspicious artistic merit were designated by the jury who also acted as a hanging committee, as Class Special. The remaining pictures were divided into two classes, Class A, and Class B; Class A contained ninety pictures which were selected on account of their higher artistic excellence; Class B contained one hundred and fifty-four pictures, which while deemed worthy of a place in the beautiful Hemicycle Hall, yet were not considered so artistically excellent as those of Class A. The rule adopted by the jury of selection was a very wise one and required that all the pictures exhibited must show some evidence of an artistic purpose and the intent to represent the pictorial side of photography. Mere technical skill was not sufficient; it was the evidence in the picture itself of a serious purpose to secure pictorial results that was recognized, and technique was regarded as a secondary consideration. The place of honor in Class Special was given to a little landscape entitled

THE LATEST MAGAZINE. By Dr. W. E. Dieffenderfer. Capital Camera Club.

IRMA. By W. C. Babcock. Capital Camera Club.

"Autumn is Here," the work of Miss Estelle G. Mozart. It represented a corn field occupying the gentle slope of the hillside; scattered through the field were the shocks of corn; the horizon was broken at the right by two small trees and the rest of the sky space was filled with dainty cloud forms, while through the whole landscape could be seen the delightful haze of Indian Summer. It was true to nature without being harshly realistic, it was artistic without being unduly woolly and fuzzy. The subject was small but the treatment of it showed that artistic feeling could not be disguised even though it finds expression through the medium of a camera. Space forbids extended reference to all the good things in the exhibition. Among the prominent exhibitors may be mentioned: Miss Kate S. Curry, Mr. Wallace C. Babcock, Mr. Edward J. Daw, Miss Julia Bullock, Mr. W. F. Peabody, Dr. William P. Herbst, Mr. J. Marshall Little, Mr. J. W. L. Dillman, Mr. Frank S. Haines and Mr. Charles W. Hadley. Miss Curry shows decided ability in the line of portrait photography. Mr. Daws shows ability both in landscape and in portrait work. Mr. Peabody exhibits landscape and portrait work and was credited with having the best portrait study in the exhibition, number 209, a portrait of W. E. Waters. Mr. Hadley exhibited very interesting genre studies made in the Chinese quarter of San Francisco. Mr. Frank S. Haines was credited with having the most interesting genre study in the exhibition, entitled "A Bobtail Flush."

Of the remaining exhibitors, the very excellent work of Dr. Dieffenderfer is worthy of more than passing notice; his work illustrates the rapid progress which can be attained in a very short time by serious application combined with a love for the work attempted. One noteworthy feature of the exhibition was the simplicity of framing. There was no framing that did not harmonize with the subject, though many pictures were accepted, upon the condition that they should be suitably framed before hanging day. The press and the artists have been very kind in their criticisms and the verdict of the artists is, that the Camera Club has proven by the high standard of work exhibited, the right to recognition as a society with a love for the higher phases of art, and the ability to express its art feeling, in a language easily understood.

BAUSCH & LOMB PLASTIGMAT f-6.8 CASH PRIZE CONTEST.

FIRST PRIZE — CASH $100. SECOND PRIZE — CASH $50.

In order to secure at once specimens of work done with our new Plastigmat f-6.8, we offer the above amounts in cash for the best and second best pictures submitted on or before July 20, 1901.

CONDITIONS.

No restriction is given as to size or subject Exhibits will be judged on the basis of artistic composition, interest of subject and the extent to which the optical possibilities of the lens are demonstrated.

Negatives or negatives and prints may be submitted.

We must have assurance that negatives are made with Plastigmat f-6.8.

Exhibits must be in sealed package marked "Plastigmat Contest" and with an assumed name referred to in a sealed letter also marked "Plastigmat Contest.

It is understood that we have the right to reproduce any picture submitted whether copyrighted or not and that the ownership of negative will remain with the contestant if desired.

Contest closes July 20. Prizes will be paid July 30th.

Bausch & Lomb Optical Co., Rochester, N. Y.

London Letter

PERCY LUND

TO write about recipes and formulæ at this time of the year, when all attention is directed to out-door work, seems somewhat inappropriate; and yet, so far as my experience goes, when the photographer is most occupied in the field, he is also most occupied in the dark room. This statement has a suspicion of Irish flavour about it, yet is not far removed from the truth. As I write at the open window, many miles from my spring quarters, I see opposite a steep plot of ground covered with young trees, and at the foot, a few feet of bare, perpendicular, limestone rock. The trees are in their spring splendour of nearly full, vivid green leaf. The graceful spreading fan of the beech, the more irregular hazel shoots, the spiky wild rose and the twining briar, all are close at hand, whilst further up the slope can be seen the light and dark greens of the maple and Scotch fir. The beauty of these leaf and branch forms passes description, and the soft contrasts of light and shade among them are a delight to any artist's eye. There is a trailer of briar hanging down the rock face, every detail of its lovely shape splendidly displayed against the reddish-brown limestone background. I see a small piece of clinging ivy too, and a young thorn, and each of them would photograph capitally just as it is. But, finest of all, are the beech fans at the end of every branch. As studies of line, and suggestions for mural decoration, a series of photographs of these leaves and branches are capable of many applications, and the mere work of leisurely photographing them is in itself a valuable lesson in the education of the eye.

I go round to the front of the house — there is the sea stretching away to the south, and across the sandy bay, low-clad hills, with the sun setting over them. Here is another study of form and light and shade, but especially the latter. First comes the dark green of grassy sand slopes, with brown patches; then alternating streaks of pale brown sand and silvery water. Then, the deep green of the wooded slopes beyond. As the sun sinks lower, or is partly obscured behind a cloud layer, the lines of light and shade change, and deeper darkness settles in the hollow water courses. The colors are gorgeous, but they are only of secondary interest to the photographer. It is in the quiet contemplation of scenes and objects like these that one learns how much there is in nature to teach and delight, and one realizes how much more beautiful the landscape is at one time than another. Photography must not be narrowed down to the mere taking of photographs. It has a much greater mission to perform. It should make us all artists at heart, whether we become exhibitors of pictures or not. It should awaken our love for all that nature has accomplished, and increase the joy of existence in this mortal sphere.

There is little to chronicle among events of the month that is likely to interest American readers. The Glasgow International Exhibition is now open with a section devoted to pictures by photography representing the work of British and Continental, and American artists, collected by Mr. J. Craig Annan. I have not yet seen the pictures, but I am told they are a most representive collection and illustrate the British and foreign schools of pictorial photography most admirably. The coun-

tries other than Great Britain represented are the United States, Switzerland, France, Russia, Germany, Holland and Belgium. It is interesting to note that sun pictures seem now to constitute an essential feature of important exhibitions.

The obstacles which the secretary of a small photographic society has to overcome are often numerous and considerable. One of the great difficulties is to get members to take a reasonably active and intelligent part in the discussions which ought to follow a lecture. As a rule such observations as may be made are practically confined to fulsome flattery of the lecturer, being consequently of no value whatever to the meeting, and frequently objectionable to the lecturer. A method therefore which has been tried by the painstaking secretary of the Gainsborough Camera Club may prove applicable and advantageous in other cases. It was arranged that a number of members should give five minute addresses on some special photographic subject which was determined before hand. In effect, nine gentlemen were induced to give the club the benefit of their ideas, and such subjects as Photography for Engineers, Intensification and Reduction, Platinotype and Ozotype Printing, Copper Toning, Bromide Paper and Enlarging, were expounded most instructively and oddly enough most of the speakers exceeded considerably the time placed at their disposal. It is the duty of every man to teach himself to speak clearly and with fair fluency in public, and meetings of a photographic society provide opportunities in this direction that photographers should not overlook.

An interesting modification of the carbon process was suggested in a recent number of "Photography." It involves employment of transparent celluloid as a support for the tissue during development and also afterwards, the print being backed up by paper of a suitable tone, and viewed through the celluloid. The following practical details are given by our contemporary: "A quarter of an ounce of Heinrich's gelatin was allowed to soak in half a pint of water for half an hour, and was then dissolved by gently heating. In another half-pint of warm water 50 grains of potassium bichromate were dissolved, and the two solutions mixed and filtered through two thicknesses of swan's-down calico. The celluloid is fastened to a sheet of glass or on a board, and is coated with this liquid, which may be just warm — there is little fear of so dilute a solution setting readily — and as much as possible is poured off again, and the celluloid dried. Before using it as a support for the tissue, it should be exposed to daylight for some hours, so as to ensure the substratum being quite insoluble. Upon this as a basis, an ordinary carbon print can easily be developed. Owing to the softening action of warm water upon celluloid the use of hot water must be avoided, and only just enough heat employed to develop the picture. It is then alumed, washed and dried. After drying, the photographer can try the effect, first of one and then of another, backing paper until he has one to suit. Some prints require a rough-toned paper, although for many prints a white paper will be found most suitable."

Foreign Abstracts

Warm Tones for Transparencies. The color of the image produced by exposing and developing a bromide plate varies with the time of exposure and the concentration of the developer. Short exposure and strong developer give black or olive tones, weak developer and longer exposure give brown to red tones. If for instance 30 seconds exposure gives a pure black with an ordinary transparency plate, with 60 seconds we will get a brown tone, with 90 seconds dark purple, with 3 minutes bright purple and with 5 minutes red. The proper developer is as follows:

A.	Hydrochinon	7.5 g
	Citric acid	4 g
	Potassium bromide	2 g
	Water	300 cc
B.	Caustic soda	7.5 g
	Sodium sulphite	38 g
	Water	300 cc
C.	Ammonium bromide	15 g
	Ammonium carbonate	15 g
	Water	300 cc

The warmer the tone desired the more of C one adds to a mixture of equal parts of A and B, while at the same time dilution with one to three volumes of water is necessary. The development is proportionately lengthened, and takes from five to fifteen minutes. [Phot. Chronik, 1901 : 235.]

Farmer's Reducer. A modified form of this reducer proposed some years ago by A. Haddon is apparently little known, and consists of adding ammonium sulphocyanide instead of hypo. Its advantage is that a not very thorough washing will suffice after reduction. Mix:

Red prussiate of potash	1 g
Ammonium sulphocyanide	2 g
Water	100 cc

The working of this is very energetic; to obtain slower reduction, use half the quantity of prussiate. [Apollo, 1901 : 104.]

Intensification by Dyes. Ordinarily by intensification we mean a purely chemical process, involving the change of the silver image by the use of a salt of mercury, silver, copper, or uranium. The processes involving the use of coloring matters are less known. The process is partly chemical, however, and depends on the fact that colloids treated with bichromates become insoluble on exposure to light. One form of the process is very simple. A negative, which may have been developed with any developer except pyro, which tans the film locally, and which must not have been hardened by alum or acid fixing baths, or formalin, is dipped in a solution of bichromate not more than three per cent. in strength, and dried. The glass side is exposed to the sun about a minute, and then thoroughly washed, and partially dried. If it is now laid in a bath of any dye dissolved in water, the shadows having become insoluble will not absorb the dye, while those parts which have been protected by the silver and hence have not been affected, will take up the coloring matter. For portraits, India ink is best, as agreeing in color with the retouching. For great intensification a very soluble yellow dye is best.

There is another method which can be applied to hardened negatives, and also possesses the advantage that the negative can be restored to its original condition at any time. The negative is flowed with a bichromated solution of fish-glue or albumen and then printed. The best formula is this:

A.	Fish glue	15 cc
	Glucose	60 cc
	Glycerin	5 drops
	Water	150 cc
B.	Water	150 cc
	Ammonium bichromate	15 g

Mix equal parts, and filter through cloth. Flow the negative film and dry in the dark. Print from glass side one minute in sun or four in shade. Then leave in a moist dark room, film up, until it becomes slightly tacky. Then sift the finest graphite through fine gauze on surface and rub circularly with a wide brush. This gives opportunity for local application. Flow with collodion and as soon as solidified, but not dried, wash until bichromate no longer colors the water, and dry. The glue layer can be easily removed if original negative must be restored. [Phot. Chronik, 1901 : 240.]

Halation. As the result of a series of experiments on halation carried out with backed and unbacked plates, ordinary film and stripping film, Ernest Marriage concludes that there are two varieties of halation, one due to reflection from the support and the other due to spreading of the light in the film. The subject was an incandescent electric light bulb and the final results were pictures without halation of either kind. The prevention of halation of the first kind is best attained by the use of ordinary plates backed. The white paper supports of the stripping films are fairly good reflectors. The other variety of halation, spreading of light in the film, is due mostly to over exposure, and is accentuated by long development and restraining. Hence as short an exposure as possible on a backed plate, with vigorous development, will give the least possible halation. [Photography, 1901 : 321.]

Gold Toning. The use of a sulphocyanide toning bath for gelatine paper has the advantage that no matter how dilute the bath may be, all of the gold is used and the paper acquires the desired tone if immersion is long enough continued. Make stock solutions as follows :—

A.	Gold chloride	15 gr
	Water	16 oz
B.	Ammonium sulphocyanide	150 gr
	Water	16 oz

For every 20 cabinets or their equivalent (425 sq. in.) mix equal parts of the two solutions according to the desired tone : Purple black, 3 1-2 oz; Purple brown, 2 1-2 oz ; Sepia brown, 2 oz ; Light sepia, 1 oz of each. Pour the gold slowly into the sulphocyanide and never the reverse. Dilute to 24 to 32 oz, as may be necessary to cover the prints well and allow to stand several hours before using. Immerse the washed prints simultaneously and keep well separated. When they have reached the desired tone, the bath is exhausted and may be thrown away. Fix fifteen minutes in a 1 : 6 solution of hypo. [Revue Suisse 1901 : 123.]

Notes and News

ASTRONOMICAL PHOTOGRAPHY. Professor Pickering of Harvard has recently succeeded in photographing with the eight-inch Draper telescope, spectra of stars of the thirteenth magnitude, so faint that the stars themselves were not visible in a twelve-inch telescope. This makes possible spectrographic records of suns conservatively estimated at more than two hundred millions, including every star shown in the forty-three thousand plates of the international photographic star map now approaching completion.

DETROIT CONVENTION. The Second Vice Pres., H. S. Klein, writes as follows: Within a few weeks Detroit will herald the coming of the P. A. of A. and all will be in readiness to receive them. In every direction are indications that the meet will be the grandest of the association.

In the present prosperous business condition, you cannot afford to miss it. There will be talks by people who know more than they can contain, and must shed their knowledge, so come with a good receptacle to take it in, but remember the big head does not always hold the most.

Detroit is known for its hospitality, and those who know enough need not confine themselves to the educational feature but can turn out for a jolly good time, it will be there for the asking or taking, in fact it will be heaped upon you.

In return for all that is offered you, we have but one request, send us a few bits of your best work, a week or two in advance of the opening, we will see to the proper hanging. Do not delay, as everything must be in readiness, Aug. 6th, and no exhibit can be placed after the opening date. Let us impress you with the fact that your attendance means money in your purse, skill in your art, success to the convention, and a loyal obligation to the P. A. of A.

GLOUCESTER, MASS. On Friday, May 3, the Cape Ann Camera Club listened to a most interesting lecture by Miss E. B. Richardson, instructor of art in the Boston public schools, representing the PHOTO ERA. The subject was "Composition in Photographs," and a large number of pictures were shown to illustrate the principles enunciated. During the third week of May the PHOTO ERA exhibition of photo-mechanical processes and photographic printing methods was shown at this club, going there from Providence and West Medford, and being afterwards shown at Taunton and Fall River.

N. E. LANTERN SLIDE EXCHANGE. The annual meeting of the New England Lantern Slide Exchange, was held at the United States Hotel, Boston, Wednesday evening, May 29. Delegates from eight clubs were present, representing Gloucester, Medford, Canton and Brockton, Mass., Providence and Phenix, R. I., New Haven and Hartford, Conn.

The secretary's report showed the Exchange to be in a flourishing condition and that the season just ended had been a very satisfactory one. It was noted by all that there had been a great improvement in the quality of the slides, and that the sets had been of a higher average than ever before sent out in this Exchange.

The matter of prizes for the past season was referred to the Exchange Secretary with power to act.

In view of the fact that a larger number of amateurs make prints than make Lantern Slides it was decided to have the Exchange cover a broader field than before, the name of the Association being changed to New England Photographic Exchange and plans for print exhibitions adopted.

Some important changes were made in the rules. Copies of the new rules will be sent upon application to the Secretary, J. Eliot Davison, Pawtucket, R. I.

Membership in the Exchange is limited to sixteen societies and at present there are only four vacancies.

The Annual Field Day of the Exchange was held at Lexington and Concord on Thursday, May 30, about fifty members of the Providence, Mystic, Brockton, Phenix, Hartford and New Haven Clubs participating. The party left Boston at 8.30 via trolly, making a short stop at Lexington to view the famous landmarks there, then proceeding to Concord where dinner was served, upon their arrival, at the historic Wright Tavern. After dinner, the party scattered over the town viewing the many points of interest, returning to Boston on the 5 o'clock train.

It was a pleasant excursion, highly enjoyed by all. Although it was not ideal weather for photographic work many beautiful negatives were secured and will doubtless be in evidence in the slides and prints shown next winter.

PROFIT SHARING. The Brownell Camera Works, the camera department of the Eastman Kodak Company, has encouraged the formation of a profit-sharing company among its employees. All the metal-workers of the company are to leave the shop and start a factory of their own, sharing the profits, and the camera company is to give them the preference over other metal working firms in the distribution of its work, much of which has been done by outside parties, as the factory accommodation is limited. The company is to rent its machinery to the workmen, and guarantees them $75,000 worth of work in a year.

A RICH AMATEUR. The Sultan of Morocco has just ordered himself a new camera, which is the wonder and envy of Europe. The camera is to surpass, just a little, everything of the kind ever built, being made throughout of solid gold, with the exception of the lens, with which His Majesty is greatly dissatisfied, for this reason. The cost is to be in the neighborhood of $7,500. It is understood that His Majesty has a corps of men especially detailed to carry the camera, and do everything but press the diamond-studded button, which he condescends to do himself. The camera would have been made of platinum, but the supply of the world was not equal to the task.

THE PRICE OF PLATINUM Owing to the marvellous popularity of the platinum print, of late years, the price of this metal has soared by leaps and bounds, and is now $36 an ounce, against $5 five years ago. The increasing scarcity of this metal is causing consternation among chemists, electricians and other scientists, who can find no substitute for this noble metal. The mines of the Transvaal have been closed for some time, and its only other source is Siberia, whose mines are rapidly becoming exhausted. The decrease in production is becoming so alarming that a bill was introduced in the German Reichstag forbidding its use in photography, on the ground that this use is unnecessary, while nothing can replace the metal for chemical and electrical purposes. The bill was defeated, but is likely to pass at the next session.

ECLIPSE PHOTOGRAPHY. The expedition of the Massachusetts Institute of Technology to Sumatra cables that, during the recent eclipse, it succeeded in photographing the shadow bands which flit across the landscape during the progress of the eclipse. Absolutely nothing is known as to the nature of these bands, and the solving of this riddle will be a great triumph for American astronomers, as the whole astronomical world has been at work on the problem for fifteen years.

ALUMINUM MOUNTS. By a new process, aluminum is now rolled into sheets two hundred and fifty to the inch, which are to be used abroad, instead of paper, for printing. There is a strong probability that photographic emulsions will soon be coated upon this material, a white surface being given by a coating of white oxide of zinc. This will remove all danger of lack of permanency, as the metal base cannot retain injurious chemicals, as paper does.

AURORAL PHOTOGRAPHY. The polar aurora has long evaded the efforts of the photographer, but Herren Brendel and Baschin, when stationed in Norwegian Lapland to study the magnetic aspects of the aurora, contrived to overcome all difficulties and obtained satisfactory photographs. The chief factor in their success appears to have been the use of highly sensitive plates, stained with erythrosine.

DUTIES ON CAMERAS. There has been more or less question as to the right of customs officers to impose duty on parts of camera apparatus of foreign manufacture if taken abroad as an integral part of the camera and brought back to this country as such. It was held that, having been subject to duty once and being exported only as a necessary part of an otherwise American instrument, such foreign lens, shutter, or finder was, to all intents, also American upon being re-imported. O. L. Spaulding, acting secretary of the Treasury has just made a decision to this effect and such parts will henceforth enter duty free. It is, however, held that American films taken abroad and exposed must pay duty upon re-importation, as being enhanced in value. This may often seem a hardship, as the value of most such films is merely sentimental.

We have recently received some very excellent samples of LePage's Photo Paste, which we can recommend highly for use in mounting photographs. It comes in tubes and glass jars, is non-cockling in character and always keeps fresh and sweet. In price it compares very favorably with other favorite brands now upon the market, and can be had of any photo supply dealer or by applying direct to the factory at Gloucester, Mass.

Book Notes

A YOUNG PATRIOT. By Dr. J. H. Eaton.

The articles on "Lantern Slide Making," which were published in the Photo American by Osborne I. Yellott last year, have been gathered together and are republished in book form by Editor Newcomb. They contain all the practical information that is needed to make slides successfully and a line sent to the Photo American office, Bible House, New York, with stamps, will bring the book by return mail.

Chlorsilber Schnelldruck Papier, von L. Hermann Liesegang (E. Liesegang, Dusseldorf.)

We have read with much pleasure, this little treatise on quick printing silver papers. The manipulation of this printing paper is carefully described, both exposure and development. To any amateur or professional and familiar with German it would make interesting reading.

Lloyd's Photographic Encyclopedia for 1901 comes to us increased to over 400 pages in size. Of this 76 pages is filled with a series of articles on various branches of photography by recognized experts, and the remainder is filled with the catalogue of the firm, comprising every varity of photographic goods. It will pay every one of our readers to send 20 cents for this to A. J. Lloyd & Co., Boston.

The Photographic Art Journal, the latest addition to the list of our contempories, is a beautiful magazine. It is devoted solely to the artistic side of photography and reproduces in an eminently satisfactory manner prints selected principally from the English print exchange clubs and the criticisms on them from the club note-books. It is desirous of receiving pictures and articles from any source, Subscription a dollar and a half, Photographic Art Journal, St. Martin's, Leicester, England.

GERMAN HANDBOOKS. There comes to our table from G. Schmidt, Berlin, "Leitfaden der Landschafts-Photographie," and "Anleitung zur Projektion." To those who can read German the first is a very useful treatise on landscape photography, which is as well a good treatise on general photography. The first 66 pages are devoted to the choice and manipulation of apparatus, then comes an equal space, with many fine illustrations, devoted to the taking of the picture, including the artistic treatment, and the books close with chapters on the making of the negative and print, with many useful dodges for getting good pictures from poor negatives. The price is one dollar, and we can supply you. The second book is a manual of the optical lantern, and besides very thorough explanation of all types of the magic lantern, and the operation of the same, it contains a very lucid and comprehensive explanation of the construction and operation of the various species of moving picture machines. The book is worth seventy-five cents to all lantern operators who can read German, and may be obtained at this office.

PORTRAIT PHOTOGRAPHY. The May number of the "International Musterblatter von Portrait-Aufnahmen" contains twenty reproductions of portraits by the leading operators of the world, among whom we notice a goodly share of Americans. The pictures, which are made by the German makers of "Rotograph" paper, are of great value as examples of fine posing and lighting. Published by K. Schwier, Weimar, Germany.

PHOTO ERA

The American Journal of Photography

Published and copyrighted by the proprietor,
THE PHOTO ERA PUBLISHING COMPANY,
170 Summer Street, Boston, Mass.

THOS. HARRISON CUMMINGS, Editor.

Associate Editors:
M. O. SAMPSON, CHESTER F. STILES,
HERBERT W. TAYLOR, F. R. FRAPRIE.

Entered at Post-Office, Boston, as second-class matter.

Contributions relating to photography in any and all of its branches will be received for publication.

SUBSCRIPTION RATES.

The annual subscription in the United States, Canada, and Mexico, is $1.50
In other Countries within the Postal Union . 2.00

Always payable in advance.
Single copies 15 cents each.

Advertising rates on application to the manager.

VOL. VII. JULY 1901. No. 1

Pictorial Photography. In the current issue of the PHOTO ERA, it is our privilege to call attention to some of the picture work which took the photographic world by storm some twenty-five or thirty years ago. The pictures of H. P. Robinson, when they first made their appearance, were hailed with delight by makers of photographs the world over. It seemed as though he had attained so high an ideal that there was little else to be desired. And, it must be confessed that, measured by any standards, even after this lapse of years, they are still beautiful to look at, and fill us with admiration for the art that produced them. It is true that the sharp-all-over print is now considered by many as a thing of the past, and the new school of Photographic Art is more concerned with securing broad effects rather than details in its pictures. Yet, these wonderful prints, in all their simplicity and strength, arrest our attention, and stir our best impulses today, on the principle that "a thing of beauty is a joy forever." Diffusion of focus, the emphasizing of certain planes, and the breaking up of all detail by using rough surfaced papers, so that the result is soft and pleasing, may be the way of artistic salvation for the photographer who yearns to obtain by his favorite process, the same effects as are produced by the brush man. "But, in pictorial photography, says A. Horsley Hinton, in the Amateur Photographer," it is not so clear as to what are the lines along which any great advance is possible. Indeed looking back over the achievements of the past two years, during which period, it will be admitted that pictorial or artistic photography has 'boomed,' I feel very doubtful whether we are any more advanced now than then, sorrowful as the statement may be."

Bird Photography. Interest in this subject, just now, is very active and widespread. We have received from G. P. Putnam's Sons, New York and London, advance sheets of a most interesting and very timely publication, entitled 'Home Life of Wild Birds'—a new method of Bird Study and Bird Photography" by Francis H. Herrick. The book is a handsome one, printed on extra fine coated paper and is beautifully illustrated by photographs from nature of birds and their nests, by the author himself. Professor Herrick is a skilled photographer as well as a clever naturalist—and the results he shows, are the best proofs of the value of the photographic methods which his book is written to set forth. Next to reading the book itself, we would advise the careful perusal of the article which he has written, on this subject, in this number of the PHOTO ERA.

A Dark Brown Roast. If there is anything on which the editor of Photo Miniature

is sensitive, it is his inability to write poetry, and get general advertising. The slightest suggestion of anything poetical in a photographic magazine suffices to rouse his otherwise amiable and prosaic nature and prompts him to say things. Some time ago we urged upon him the utter folly of his course. For "A poet is born not made," and for a time he seemed to subside. Now, it is advertising that hurts his fancy. In a recent issue of that very delightful though often belated publication Photo Miniature he comments as follows:—

"PHOTO ERA for April contains a profusely illustrated account (third paper) of "The Moki Snake Dance" by A. C. Vroman; a prose poem on April, etc.; and sundry advertisements of rye whiskey, corsets, garters, compounded antidote coffee and other interesting items. Price 15 cents a copy, and a bargain at the price." We can almost hear the chuckle of delight, and see the ghoulish glee with which the Editorial mind delivered itself of this last paragraph, and thought, though it did not write — this is a dark brown roast for the PHOTO ERA. Meanwhile, not being a house organ we can only plead in extenuation of our fault of carrying advertising matter in our pagers, that we are consumed with a desire to pay our bills promptly, and advertising helps to pay bills. We earnestly commend to the attention of our Esteemed Contemporary, the following estimate on the value of the PHOTO ERA as an advertising medium by one who knows.

Profitable Advertising. In a recent issue, Profitable Advertising one of the best authorities in the country on the value of advertising mediums, publishes the following:

One of the most successful business propositions to-day in the Boston publishing world is the PHOTO ERA, a new photographic monthly which has attracted widespread attention by reason of its artistic appearance and clever makeup, and which has suddenly attained a circulation of many thousand copies each month on its merit as a photographic publication, pure and simple.

Among the subscribers to the PHOTO ERA to-day are many of the leading advertising managers of the country, who for their own personal interest, and because of the application of photography to their uses, find much valuable material and suggestion in its pages. Advertisers necessarily seek the best in illustrations and engravings; hence the patronage of the PHOTO ERA is extending among the larger appreciative business houses. General advertisers find its pages very profitable because they are read by thousands of cultured people who delight in the comforts of life and have the means at their command to gratify their wants. It is the official organ of nearly five thousand amateur and professional workers in New England alone, besides enjoying an extensive circulation throughout the country at large.

The members of the Boston Camera Club, the Harvard University Camera Club, the Providence, R. I., Camera Club, the Valley Camera Club and the Photographers' Association, of New England, all read it religiously every month, while there is hardly a studio or library in all New England into which the PHOTO ERA does not go. Despite this fact, the largest circulation is spread through the country at large, east and west of the Mississippi River to the Pacific Coast. It is not a local circulation, but widespread; and the secret of its extraordinary extent and size lies in the fact that photography is daily becoming more and more popular, while the PHOTO ERA is an up-to-date publication on the subject, selling at a popular price.

Gum Bichromate Process. Undoubtedly, the leading exponent of this process to-day, in the whole world, is Robert Demachy of Paris. A collection of prints by him has recently been placed on exhibition at the Royal Photographic Society's rooms in Russell Square, London. The British Journal of Photography, which has heretofore most thoroughly condemned Gum Bichromate printing has nothing but words of praise for the examples of it shown by Demachy.

In a short address, prepared by him and read before the society, he took occasion to declare that one of the reasons why Gum Bichromate printing was unpopular, was that "its worst effects have been supposed to be its best." In other words, that the "excessive, indiscriminating and uniform defining power of a good lens, the vigor and sparkling contrasts in a negative plate, the immaculate and detail preserving qualities of printing paper, these characteristics which have earned disapproval for the photograph amongst the artistic, these worst qualities being supposed to be its best essentials. M. Demachy proceeds later: — "Gum bichromate workers have been accused of producing poor imitations of wash drawings, engravings, etc. The prints may be poor, I readily acknowledge, but they are certainly not imitations, for they have not been made with the intention of being passed off for something else than photographs."

"Personally I can say that though I never tried to imitate either water colors or engravings, I have not thought it worth while to destroy a print because it showed some of the characteristics, either in texture or color of the above named process. But I am quite ready, when I have found some medium superior to lamp-black, etc., for blacks — to Venetian red, etc., and to brown earths, etc., for sepia — to discard these pigments used by ignorant painters and engravers and to employ the medium discovered by the intelligent photographer.

"If from perhaps half of the prints shown in this collection a good deal has been suppressed either by rubbing out or washing down, nothing has been added." "In fact, there is much less brush work in these gum prints than is generally believed; the medium is so delicate, the film is so frail, that, save in backgrounds where the brush may be used more freely, it is next to impossible to deliberately alter part of a figure by friction, without introducing such a tremendous difference of aspect between the brush-treated part and the rest, that all the equilibrium of the picture will be destroyed. But local development with warm or hot water has very often been resorted to in order to rectify false values."

In France and Germany the process is undoubtedly gaining ground rapidly. While in England and America public interest is being very much attracted towards it.

During the month of June, a collection of prints by Dr. Norris of Philadelphia adorned the walls of the PHOTO ERA office and were very much admired by all who saw them. They are largely landscapes, full of rich coloring, showing great breadth of treatment, with a sprinkling of portraits of a high order of merit.

On Friday June 14th, Mr. V. F. Harriman of Boston, gave an interesting demonstration of the Rotograph paper, before the Harvard Camera Club, Hastings, Hall, Cambridge, Mass.